

EPA Plans to Renew Exemption for Hazardous Waste Wells

Ineos USA LLC

Lima, Ohio

September 2015

Comment period scheduled

U.S. EPA is taking comments from the public on its plan to reissue an exemption from certain federal regulations for Ineos USA LLC. The public comment period ends **Tuesday, October 13, 2015.**

How to comment

You can send written comments to:

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For more information

To see the draft decision document, visit the Lima Public Library, 650 W. Market St. The full administrative record, including all data submitted by Ineos, is at the U.S. EPA's regional office (*address above*). Contact Stephen Roy at 312-886-6556 for an appointment.

To learn about U.S. EPA's Underground Injection Control Program, visit www.epa.gov/r5water/uic.

You may call the EPA toll-free, 800-621-8431, Ext. 66556, weekdays, 9:30 a.m. to 5:30 p.m.



The U.S. Environmental Protection Agency plans to approve a request from Ineos USA LLC to continue injecting hazardous waste deep beneath the earth's surface. The Agency will consider public comments (*see box, left*) before making a final decision.

Ineos has four injection wells at 1900 Fort Amanda Road, Lima. Ineos operates the wells under permits from the Ohio EPA. They allow the company to dispose of liquid hazardous waste from a variety of sources.

The company also needs an exemption from the federal ban on underground disposal of hazardous waste. U.S. EPA originally approved an exemption in 1992. If reissued, the exemption will be valid until January 2025, based on the modeling done in 2005.

U.S. EPA found the company has shown – based on a reliable prediction – that injected waste will not move out of the injection zone within 10,000 years. The company has also shown that waste will not come into contact with any underground source of drinking water.

Background

Federal law prohibits the disposal of untreated hazardous waste on the land or into an injection well. The law allows U.S. EPA to grant exemptions. To qualify, an owner or operator of an injection well must demonstrate, with a reasonable degree of certainty, that injected material will stay in the injection zone for as long as the waste is hazardous. That can be done by showing conditions at the injection site will prevent any movement of injected waste out of the injection zone in 10,000 years, and that conditions will prevent the possibility of waste contaminating any

underground source of drinking water. This is known as a no-migration demonstration. Ineos made an acceptable no-migration demonstration in its request that U.S. EPA reissue the 1992 exemption.

Technical information

Ineos uses hazardous waste wells, which U.S. EPA calls Class I wells, to inject into a geologic interval composed of the lower Eau Clair Formation, the Mt. Simon Sandstone and the Middle Run Formation. The top and bottom of the injection interval are 2,631 and 3,241 feet below ground level, respectively. The deepest supply of drinking water in the area is approximately 400 feet below ground level, so there is approximately 2,230 feet of separation between the drinking water source and the injected hazardous waste. An arrestment interval is just above the injection interval. The top and bottom of the arrestment interval are 1,631 and 2,631 feet below the ground surface, respectively. The arrestment interval keeps the injected fluid in the injection zone because it contains low-permeability rock and does not have faults or fractures that could allow the fluid to move upward. The injection interval and the arrestment interval together are called the injection zone. A 204-foot thick confining zone lies above the injection zone. Extending laterally for hundreds of miles, the confining zone provides additional protection.

All injection wells have an “area of review.” In this case, the area of review extends 10 miles around the well bore. If there are other wells in the area of review that are not properly plugged or abandoned, they could serve as a pathway for waste migration from the injection zone. Ineos identified five wells within the area of review and showed these wells were properly constructed or outside the area in which pressure could cause fluids to contaminate underground sources of drinking water. There are no known faults in the area of review that connect the injection interval with drinking water sources.

Under Ohio EPA permits, the Ineos wells must pass an annual pressure test and a radioactive tracer survey to confirm the injected fluids are entering the injection interval and not moving up the well bore out of the injection zone. These tests demonstrate the mechanical integrity of a well’s key components. The wells passed the annual pressure test and radioactive tracer survey performed between June 2014 and March 2015.

Conditions of petition approval

The proposed reissuance of the exemption is subject to conditions. Failure to comply with the conditions is grounds for termination of the exemption. Ineos must

submit a petition for reissuance if it wants to modify any of the following conditions:

1. The exemption applies to the four existing hazardous waste injection wells at the Ineos facility.
2. Injection of restricted hazardous waste is limited to the part of the Mt. Simon Sandstone and Middle Run Formations at depths between 2,631 and 3,241 feet below the surface.
3. Only restricted wastes designated by the codes in Table 1 in the draft decision may be injected.
4. Maximum concentrations of chemicals allowed to be injected are listed in Table 2 in the draft decision.
5. The average specific gravity of the injected waste stream must be between 1.00 and 1.05 over a three-month period.
6. Ineos may inject up to 175 gallons per minute into each of its four wells, based on a monthly average.
7. The exemption is approved for the 20-year modeled injection period, which ends on Jan. 31, 2025. Ineos may petition for a reissuance of the exemption beyond that date, provided the company gives U.S. EPA a new and complete petition and no-migration demonstration by June 30, 2024.
8. Ineos must submit a quarterly report containing an analysis of the injected waste and indicating the chemical and physical properties, including the concentrations, of all the injected chemicals listed in Table 2 in the draft decision to U.S. EPA.
9. Ineos must submit an annual report containing the results of a bottom hole pressure survey (fall-off test) performed on one well each year to U.S. EPA. The annual report must demonstrate that the properties of the injection interval have not changed significantly since the exemption was granted.
10. Ineos must submit the results of radioactive tracer surveys and annulus pressure tests for the wells to U.S. EPA annually. (The annulus is the area of the well that separates the inner tubing through which fluids are injected and the outer portion of the well.) These tests demonstrate whether the wells are working properly.
11. Ineos shall notify U.S. EPA in writing if any well loses mechanical integrity, and prior to any workover or plugging.
12. Ineos must fully comply with all requirements set forth in underground injection control permits issued by Ohio EPA for the four Ineos wells.
13. The exemption is subject to review upon the expiration, cancellation, reissuance or modification of the Ohio EPA well permits.
14. Whenever U.S. EPA determines that the basis for approval of a petition under 40 CFR §§ 148.23 and 148.24 may no longer be valid, the Agency may terminate this exemption and require a new demonstration.